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10/686,480	10/16/2003	Katsunori Nishimura	520.43216X00	8057

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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/686,480	NISHIMURA ET AL.	
	Examiner	Art Unit	
	Tony Chuo	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-9,11-13,16-25,28-34 and 37-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-9,11-13,16-25,28-34 and 37-44* is/are rejected.

7)☒ Claim(s) *4 and 41* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/31/07 has been entered.

Response to Amendment

2. Claims 2-9, 11-13, 16-25, 28-34, and 37-44 are currently pending. Claims 1, 10, 14, 15, 26, 27, 35, and 36 have been cancelled. New claims 41-44 have been added. The previous 112, 1st paragraph rejection of claims 26, 27, 35, and 36 is withdrawn. The previous 112, 2nd paragraph rejection of claim 19 is withdrawn. The amended claims do overcome the previously stated 102 and 103 rejections. However, upon further consideration, claims 2-9, 11-13, 16-25, 28-34, and 37-44 are rejected under the following new 112, 102, and 103 rejections.

Claim Objections

3. Claim 4 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is

required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The amended claim 18 also recites a water-retaining layer that adjoins a water permeable layer.

4. Claim 41 is objected to because of the following informalities: claim 41 recites the same limitation as claim 9. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. By amending claim 18 to include a water permeable layer, the scope of dependent claim 8 has changed. Since the amended claim 18 is supported by the embodiment of figure 2, the limitation of claim 8 is not supported by the specification because the embodiment of figure 2 does not include a carbonaceous porous filter.

7. Claim 33 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had

possession of the claimed invention. The limitations “said porous water-retaining layer being in contact with a channel containing water” and “where the cooling water inlet and the water-retaining layer are in contact with each other" are not supported by the specification. Figure 5 of the specification shows a filter "501" disposed between the cooling water inlet "204" and the water retaining layer "203". Therefore, the cooling water inlet does not contact the water retaining layer.

8. Claim 34 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. By amending claim 33 to include a filter disposed between the cooling water inlet and the water-retaining layer, the scope of claim 34 has changed. Since the amended claim 33 is supported by the embodiment of figure 5, the limitation of claim 34 is not supported by the specification because the embodiment of figure 5 does not include a water permeable membrane. In addition, the specification also discloses that the water permeable membrane can be omitted because of the addition of the porous carbon filter (See page 25, lines 15-17).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 33, 34, and 37-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawazu (JP 08-138704).

Regarding claim 33, the Kawazu reference discloses a fuel cell assembly comprising: a humidifier "200" and a plurality of fuel cell units "10", wherein each of the fuel cell units comprises an electrolyte membrane "11", a cathode "12" adjacent to one face of the membrane, an anode "13" adjacent to the other face of the membrane, a gas diffusion layer adjacent to the cathode, a gas diffusion layer adjacent to the anode, a separator "14" having a flow channel for flowing oxidizing gas, which is adjacent to the cathode, and a separator "15" having a flow channel for flowing fuel gas, which is adjacent to the anode, wherein the humidifier comprises a porous membrane (water-retaining layer) "602" for retaining water supplied thereto, wherein the porous membrane "602" communicates with a porous carbon (filter) "610" disposed between the cooling water inlet and the porous membrane, and wherein the humidifier adjoins an end of the plurality of the fuel cell units in such as relation that the porous membrane faces the flow channels thereby to transfer water introduced into the porous membrane to the fuel gas and oxidizing gas flowing in the flow channels (See paragraphs [0031],[0033],[0034],[0036],[0040], and Drawings 1, 3, and 5).

Regarding claim 34, it also discloses a humidifier that further comprises a porous carbon (water permeable membrane) "608" located adjacent to the end of the plurality of fuel cell units and between the plurality of fuel cell units and the porous membrane "602" (See Drawing 5).

Regarding claims 37 and 39, it also discloses a porous membrane "602" that takes water thereinto at a peripheral portion thereof, where the porous membrane is in contact with cooling water (See Drawing 5).

Regarding claim 38, it also discloses a porous membrane that is a hydrophilic polyolefin material (See paragraph [0037]).

Regarding claim 40, it also discloses a fuel cell assembly that has a single humidification unit "200" (See Drawing 1).

11. Claims 33 and 37-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Mizuno (JP 07-135012).

Regarding claim 33, the Mizuno reference discloses a fuel cell assembly comprising: a humidifier "30" and a plurality of fuel cell units "100", wherein each of the fuel cell units comprises an electrolyte membrane "110"; a cathode "130" adjacent to one face of the membrane; an anode "120" adjacent to the other face of the membrane; a separator "150" having a flow channel for flowing oxidizing gas, which is adjacent to the cathode; and a separator "140" having a flow channel for flowing fuel gas, which is adjacent to the anode, wherein the humidifier comprises a hydrophilic layer (water-retaining layer) "314" for retaining water supplied thereto, wherein the hydrophilic layer "314" communicates with a microporous film (filter) "312" disposed in between the cooling water inlet and the hydrophilic layer, and wherein the humidifier adjoins an end of the plurality of the fuel cell units in such as relation that the hydrophilic layer faces the flow channels thereby to transfer water introduced into the hydrophilic layer to the fuel

gas and oxidizing gas flowing in the flow channels (See paragraphs [0013],[0015], [0016],[0019] and Drawings 1-3).

Regarding claims 37 and 39, it also discloses a hydrophilic layer "314" that takes water thereinto at a peripheral portion thereof, where the hydrophilic layer is in contact with cooling water (See Drawing 3).

Regarding claim 38, it also discloses a hydrophilic layer "314" that is made of polypropylene (See paragraph [0020])

Regarding claim 40, it also discloses a fuel cell assembly that has a single humidification unit "200" (See Drawing 1).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 2, 4-6, 11-13, 16-22, 24-29, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawazu (JP 08-138704) in view of Yi et al (US 2001/0004501).

Regarding claims 4, 13, 16, 17, 19, 22, and 24, the Kawazu reference discloses a fuel cell assembly comprising: and a stack of fuel cell units "10", wherein each of the fuel cell units comprises an electrolyte membrane "11", a cathode "12" adjacent to one face of the membrane, an anode "13" adjacent to the other face of the membrane, a gas

diffusion layer adjacent to the cathode, a gas diffusion layer adjacent to the anode, a separator “14” having a flow channel for flowing oxidizing gas, which is adjacent to the cathode, and a separator “15” having a flow channel for flowing fuel gas, which is adjacent to the anode and a humidifier “200” connected to one end of the stack, wherein the humidifier comprises a porous membrane (water-retaining layer) “602” for retaining water supplied thereto, wherein the porous membrane is in contact with a porous carbon (water permeable layer) "608” that adjoins the gas flow channels, wherein the porous membrane being in contact with a channel containing water, wherein the porous membrane faces the flow channels thereby to transfer water introduced into the porous membrane to the fuel gas, oxidizing gas, and membrane electrolyte, and wherein the porous membrane has one surface to supply water to the flow channels and a surface opposite to the water supplying surface that supplies water to the porous membrane (See paragraphs [0031],[0033],[0034], [0036],[0040], and Drawings 1, 3, and 5).

Regarding claims 5 and 6, it also discloses a porous membrane “602” that has an average pore size of 0.05 μm, a thickness of 12-100 μm, and a porosity of more than 50% (See paragraphs [0037],[0063]).

Regarding claim 11, it also discloses a hydrogen gas storage tub (not shown) that is connected to the fuel cell assembly with a hydrogen gas passageway “540” through which the hydrogen flows (See paragraph [0044]).

Regarding claim 2, 18, and 21, it also discloses a porous membrane that is made of a hydrophilic polyolefin material (See paragraph [0037]). It also discloses a porous

carbon “610” that controls the flow rate of water to the porous membrane “602” (See Drawing 5).

Regarding claim 20, it also discloses two water retaining layers “610”, one for the hydrogen gas humidifier “110” and one for the oxygen gas humidifier “120” (See Drawings 1 and 5).

Regarding claim 25, it also discloses a porous carbon “608” located adjacent to the end of the plurality of fuel cell units and between the plurality of fuel cell units and the porous membrane “602” (See Drawings 1 and 5).

Regarding claims 28, 29, and 31, it also discloses a porous membrane “602” that is in contact with water in a cooling water channel and takes water thereinto at a peripheral portion thereof (See Drawing 5).

Regarding claim 32, it also discloses a fuel cell assembly that has a single humidification unit “200” (See Drawing 1).

However, Kawazu does not expressly teach a water-retaining layer that has a mean micro-pore diameter of 10 to 300 μm and a thickness of 50 to 300 μm, whereby water is retained by capillary force by the water-retaining layer when the stack of unit fuel cells is not working and is taken by gas fed to the anode and gas fed to the cathode against the capillary force when the stack of unit fuel cells is working; a water-retaining layer that adjoins the anode or cathode; or a water permeable layer that adjoins the anode or cathode. The Yi reference discloses hydrophilic substrate layers “100” & “102” that functions as water-retaining layers that humidify the anode gas and cathode gas that are comprised of a porous carbon-carbon fibrous composite having a thickness of

about 175 microns and a pore size of about 27 microns to 37 microns (See paragraph [0066]). It also discloses water-retaining layers "100" & "102" that adjoin the anode "72" and cathode "74" (See Figure 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Kawazu humidifier to replace the porous membrane "602" with a water-retaining layer that has a mean micro-pore diameter of 10 to 300 μm and a thickness of 50 to 300 μm; a water-retaining layer that adjoins the anode or cathode; and a water permeable layer that adjoins the anode or cathode in order to maintain proper water balance in the anode and cathode, thereby prolonging the fuel cell's life, as well as improving its electrical efficiency and to minimize the thickness of the fuel cell stack (See paragraph [0010]).

Examiner's note: It is inherent that water is retained by capillary force by the Yi hydrophilic substrate layer when the stack of unit fuel cells is not working and is taken by gas fed to the anode and gas fed to the cathode against the capillary force when the stack of unit fuel cells is working.

14. Claims 2, 4, 11-13, 16-20, 22, 24-29, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno (JP 07-135012) in view of Yi et al (US 2001/0004501).

Regarding claims 13, 16-19, 22, and 24, the Mizuno reference discloses a fuel cell assembly comprising: a humidifier "30" and a plurality of fuel cell units "100", wherein each of the fuel cell units comprises an electrolyte membrane "110", a cathode "130" adjacent to one face of the membrane, an anode "120" adjacent to the other face

of the membrane, a separator “150” having a flow channel for flowing oxidizing gas, which is adjacent to the cathode, and a separator “140” having a flow channel for flowing fuel gas, which is adjacent to the anode, wherein the humidifier comprises a micro porous film (water-retaining layer) “312” for retaining water supplied thereto, wherein the water retaining layer being in contact with a channel “308” containing water, and wherein the humidifier adjoins an end of the plurality of the fuel cell units in such a relation that the micro porous film faces the flow channels thereby to transfer water introduced into the micro porous film to the fuel gas and oxidizing gas flowing in the flow channels (See paragraphs [0013],[0015],[0016],[0019] and Drawings 1-3).

Regarding claim 2, it also discloses a micro porous film “312” that is made of a hydrophilic polymer material (See paragraph [0019]).

Regarding claim 4, it also discloses a hydrophilic layer “314” that has the function to transmit water that is formed on porous material of the micro porous film “312” (See Drawing 3).

Regarding claim 11, it also discloses a hydrogen gas storage tub (not shown) that is connected to the fuel cell assembly with a hydrogen gas passageway “620” through which the hydrogen flows (See paragraph [0027]).

Regarding claim 20, it also discloses two micro porous films “312” (See Drawing 3).

Regarding claim 25, it also discloses a hydrophilic layer “314” located adjacent to the end of the plurality of fuel cell units and between the plurality of fuel cell units and the micro porous film “312” (See Drawings 1 and 3).

Regarding claims 28, 29, and 31, it also discloses a micro porous film “312” that is in contact with water in a cooling water channel and takes water thereinto at a peripheral portion thereof (See Drawing 3).

Regarding claim 32, it also discloses a fuel cell assembly that has a single humidification unit “30” (See Drawing 1).

However, Mizuno does not expressly teach a water-retaining layer that has a mean micro-pore diameter of 10 to 300 μm and a thickness of 50 to 300 μm, whereby water is retained by capillary force by the water-retaining layer when the stack of unit fuel cells is not working and is taken by gas fed to the anode and gas fed to the cathode against the capillary force when the stack of unit fuel cells is working; a water-retaining layer that adjoins the anode or cathode; or a water permeable layer that adjoins the anode or cathode. The Yi reference discloses hydrophilic substrate layers “100” & “102” that functions as water-retaining layers that humidify the anode gas and cathode gas that are comprised of a porous carbon-carbon fibrous composite having a thickness of about 175 microns and a pore size of about 27 microns to 37 microns (See paragraph [0066]). It also discloses water-retaining layers “100” & “102” that adjoin the anode “72” and cathode “74” (See Figure 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Mizuno humidifier to replace the micro porous film “312” with a water-retaining layer that has a mean micro-pore diameter of 10 to 300 μm and a thickness of 50 to 300 μm; a water-retaining layer that adjoins the anode or cathode; and a water permeable layer that adjoins the anode or cathode in

order to maintain proper water balance in the anode and cathode, thereby prolonging the fuel cell's life, as well as improving its electrical efficiency and to minimize the thickness of the fuel cell stack (See paragraph [0010]).

Examiner's note: It is inherent that water is retained by capillary force by the Yi hydrophilic substrate layer when the stack of unit fuel cells is not working and is taken by gas fed to the anode and gas fed to the cathode against the capillary force when the stack of unit fuel cells is working.

15. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawazu (JP 08-138704) in view of Yi et al (US 2001/0004501).

However, Kawazu as modified by Yi et al does not expressly teach the thickness of a humidifying water inlet of the humidifier that is ½ to ¾ the thickness of the porous member.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Kawazu/Yi fuel cell to include a humidifying water inlet having a thickness of ½ to ¾ the thickness of the porous member because changes in proportion were held to have been obvious (See Gardner v. TEC Systems, Inc. 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984)).

16. Claims 7, 23, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawazu (JP 08-138704) in view of Yi et al (US 2001/0004501) as applied to claims 4, 18, 22, and 24 above, and further in view of Kanazawa (US 2003/0087982).

However, Kawazu as modified by Yi et al does not expressly teach a water permeable membrane that is one or more membranes that are treated to be hydrophilic

and are selected from the group consisting of polytetrafluoroethylene, polystyrene, and copolymers of styrene and butadiene; a water-retaining layer that is a polypropylene non-woven cloth that is made hydrophilic; or a water retaining layer that is made of a hydrophilic polymer material. The Kanazawa reference discloses polymeric materials which are treated to be hydrophilic that have improved properties of water absorption such as polypropylene non-woven fabric and polystyrene (See Abstract, paragraph [0033],[0181]).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the disclosure of Kanazawa indicates that hydrophilic polymer material such as polypropylene non-woven fabric and polystyrene are suitable materials for use as water retention materials and water permeable materials. The selection of a known material based on its suitability for its intended use has generally been held to be *prima facie* obvious (MPEP §2144.07). As such, it would be obvious to use polypropylene non-woven fabric and polystyrene that have been treated to be hydrophilic.

17. Claims 9 and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawazu (JP 08-138704) in view of Yi et al (US 2001/0004501) as applied to claim 18, 22, and 24 above, and further in view of Kawazu (JP 08-138705).

However, Kawazu as modified by Yi et al does not expressly teach a porous member that has a hydrogen-oxidizing catalyst dispersed therein. The Kawazu '705 reference discloses a hydrogen oxidizing catalyst "22" that is dispersed on the porous film "21" of a humidifier for a fuel cell (See Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Kawazu/Yi fuel cell to include a porous member that has a hydrogen-oxidizing catalyst dispersed therein in order to prevent a drop in the power generating capability of the fuel cell by preventing a drop in humidifying function caused by hydrogen gas penetrating from a gas flow path side to a water flow path side through a porous film.

18. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawazu (JP 08-138704) in view of Kawazu (JP 08-138705). The Kawazu '704 reference is applied to claim 33 above.

However, Kawazu does not expressly teach a porous member that has a hydrogen-oxidizing catalyst dispersed therein. The Kawazu '705 reference discloses a hydrogen oxidizing catalyst "22" that is dispersed on the porous film "21" of a humidifier for a fuel cell (See Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Kawazu fuel cell to include a porous member that has a hydrogen-oxidizing catalyst dispersed therein in order to prevent a drop in the power generating capability of the fuel cell by preventing a drop in humidifying function caused by hydrogen gas penetrating from a gas flow path side to a water flow path side through a porous film.

Response to Arguments

19. Applicant's arguments filed 10/31/07 have been fully considered but they are not persuasive.

The applicant argues that the teachings of the applied documents do not disclose, nor would have suggested, such structure as in the present claims, including the humidifier having both a water-retaining layer and a water permeable layer as in claims 17, 18, 22 and 24, with the water-retaining layer having micro-pores and/or thickness as in the present claims, and with the water-retaining layer and water permeable layer being positioned relative to gas flow channels of the fuel cells as in the present claims. The examiner disagrees because both the Kawazu '704 and Mizuno reference disclose layers that can be construed as a water-retaining layer and a water permeable layer. In the Kawazu '704 reference, the porous membrane "602" is construed as a water retaining layer and the porous carbon "608" is construed as a water permeable layer. In the Mizuno reference, the microporous film "312" is construed as the water retaining layer and the hydrophilic layer "314" is construed as the water permeable layer. Regarding claim 33, the Kawazu and Mizuno reference are interpreted differently. In the Kawazu '704 reference, the porous membrane "602" is construed as a water-retaining layer and the porous carbon "610" is construed as a filter. In the Mizuno reference, the hydrophilic layer "314" is construed as a water retaining layer and the microporous film "312" is construed as a filter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571)272-0717. The examiner can normally be reached on M-F, 7:00AM to 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC

/Jonathan Crepeau/
Primary Examiner, Art Unit 1795